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ABSTRACT

The Repertory Grid Technique (RGT) is an interviewing and measurement strategy that originated as a methodological component of the Personal Construct Theory of G. Kelly (1955). Because the RGT focuses on internal processes, it can enhance a key informant interview in that the comparisons it requires the respondent to make stimulate connections and offer insights that represent meaningful perceptions and values. Kelly's theory defines personal constructs as the ways in which individuals create templates or patterns in an attempt to make sense of the realities of the world. The RGT is a measurement system designed to elicit the personal construct system. It is useful in survey construction as the grid is constructed. An application of the RGT approach to survey development is presented in the analysis of 189 responses of 26 administrators, teachers, and parents in an evaluation of Head Start programs. Ninety-four codes were established for these responses, which were grouped in to five domains. Making the grid is a complex sorting task in which elements are judged successively on a set of bipolar constructs, so that the grid becomes a multidimensional overlay of elements onto constructs. An appendix contains the rating sheet used for the grid. (Contains two figures and six references.) (SLD)

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The Repertory Grid as a Qualitative Interviewing Technique for Use in Survey Development

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The Repertory Grid as a Qualitative Interviewing Technique for Use in Survey Development

Qualitative methods such as key informant interviews and focus groups have been widely recognized as important early steps in survey development (Salant and Dillman, 1994). Beginning a survey research project with qualitative methods offers several advantages: 1.) the gathering of information that will enable the survey researcher to include the most salient issues and concerns, 2.) develop a set of items that represent the constructs under investigation more completely, and 3.) design items that are written "in the voice" of the potential respondents themselves.

The *Repertory Grid Technique* (RGT) is a unique interviewing and measurement strategy that originated as a methodological component of Personal Construct Theory (Kelly, 1955). It has a long history of use in psychological research, especially when the subjective ways in which individuals interpret and explain their perceptions to themselves are the objects of inquiry (Fransella & Bannister, 1977). The method has been applied to research problems in education, psychology, and medicine, particularly when the focus is on attempting to reveal the respondent's internal personal strategies for construing one's environment (Kendrick & Timble, 1994). The method has been particularly useful when examining the ways in which respondents organize their perceptions of particular events or objects of judgement. While a standardized technique with elaborate scoring options exists, it can be modified or customized when used in each new application.

Because the RGT focuses on internal processes, it can enhance a key informant interview beyond the usual structured interviewing techniques. The nature of the comparisons involved in the technique stimulate the respondent to make connections and offer insights that while not immediately accessible, represent meaningful perceptions and values related to the objectives of

the survey under development. The information gathered from such interviews is, therefore, a particularly rich example of qualitative responses.

Personal Construct Theory

In 1955, George Kelly defined personal constructs as the way in which individuals create templates or transparent patterns in an attempt to make sense of the realities of the world. Kelly (1955) considered these templates to be tentative; "in general man seeks to improve his constructs by increasing his repertory, by altering them to provide better fits, and by subsuming them with superordinate constructs or systems" (p. 9). He stated that a person's construct system exists to assist one in becoming more certain of fewer things, thereby offering protection regarding future events.

In building the theory of personal constructs, Kelly outlines 11 corollaries in an attempt to create an assumptive structure. Even Kelly recognized the limitations of his theory. Nevertheless it is important to understand the underpinnings of Kelly's intentions to connect it with the findings of this study. Kelly's fundamental postulate and corollaries are as follows: a.) Fundamental Postulate - a person's processes are psychologically channelized by the ways in which he/she anticipates events,

b.) Construction Corollary - a person anticipates events by construing their replications,

c.) Individuality Corollary - person's differ from each other in their constructions of events,

d.) Organization Corollary - each person characteristically evolves, for his/her convenience in anticipating events, a construction system embracing ordinal relationships between constructs,

e.) Dichotomy Corollary - a person's construction system is composed of a finite number of dichotomous constructs, f.) Choice Corollary - a person chooses for him/herself that alternative in a dichotomized construct through which he/she anticipates the greater possibility for extension

and definition of his/her system, g.) Range Corollary - a construct is convenient for the anticipation of a finite range of events only, h.) Experience Corollary - a person's construction system varies as he/she successively construes the replication of events, I). Modulation Corollary - the variation in a person's construction system is limited by the permeability of the constructs within whose ranges of convenience the variant lie, j.) Fragmentation Corollary - a person may successively employ a variety of construction subsystems which are inferentially incompatible with each other,

k.) Commonality Corollary - to the extant that one person employs a construction of experience which is similar to that employed by another, his/her psychological processes are similar to those of the other person, and l.) Sociality Corollary - to the extant that one person construes the construction processes of another, he/she may play a role in a social process involving the other person. (p. 103)

The RGT is a measurement technique developed to elicit the personal construct system outlined above. Unlike other sorting tasks, the RGT is generally concerned with the participant's relationship to particular people (Kelly, 1955). It is estimated by Neimeyer (1985) that 95% of published personal construct research is based in some form on the RGT (Sewell, Adams-Webber, Mitterer, & Cromwell, 1992). The RGT consists of the mapping of *elements* onto *constructs*. *Elements* can be concrete or abstract answers to a list of questions called the *Role Title List* (we later refer to these as the *Element List*). Constructs represent the way *Elements* are judged as similar and different (Liseth, Ford, Adams-Weber, Canas, & Bezdek, 1992).

Personal construct theory contains several assumptions that need to be noted. First, a construct, as described above, is a way in which *things* or *people* are construed as being alike or different from each other. This assumes a bipolar nature to the constructs, a dichotomous

construction system. As Kelly pointed out (1955), the notion of *positive* and *negative* poles was essential to the science of electromagnetics, just as *dominant* and *recessive* gene types were to Mendel's theory. Second, is the assumption that we see the world as being real and our psychological processes are based on our personal interpretations of that reality (Kelly, 1955). Third, is the assumption that "the psychology of personal constructs is more objective because it is more projective" (Kelly, 1955, p. 208). The last assumption is referred is the epistemological position called "constructive alternativism". In this assumption the researcher is not attempting to discover absolute truth, rather a categorical truth applied in a context of relationships.

A Model for Survey Development Using the RGT

While some components of the model that is offered are not unlike the usual application of good survey research methodology, the model includes a systematic process for developing a specific modification of the RGT for survey development. A sample application of the technique that illustrates the unique utility of this method for survey construction will be also be discussed.

Figure 1 outlines the steps in the model. The first step in developing a survey is to determine a clear picture of the objectives of the survey. This process often involves identifying: a.) the general type of ratings or opinions desired, b.) the objects to be rated, and c.) the population of interest. These three common features of many surveys can take many forms. For example:

- Approval ratings (a) about incumbents (b) from likely voters (c).
- Satisfaction ratings (a) about a particular service (b) from consumers of the service (c).
- Opinions (a) about future convention site selections (b) from members of an organization (c).
- Intent to purchase (a) a specific type of product (b) from potential consumers of the product (c).

Many more such examples could be created. In all of these examples, knowing the objects to be

rated does not necessarily inform the developer of the survey instrument about what specific features of the objects are relevant to the population of interest, nor does it inform the survey development process about the constructs that members of the population use to explain their experiences of the objects to be rated. The RGT is uniquely suited to assisting with this process.

Once the basic objectives for the survey are identified, key informants can be identified and open ended interview questions can be developed. The open ended questions serve to begin the interview with a relaxed, non-threatening, and trust building conversation that introduces the respondent to the general topic and gets them to begin thinking about the topic.

Next, the modified repertory grid is created using the following steps. First, the *Role Title List* is created. This is a set of objects that will serve as a stimulus list for the interview. The respondent is asked to think of specific examples of various classes of objects that will serve as prompts for further questioning. Next, the *Role Title Dichotomies* are created. These involve asking the respondent to recall specific examples of the objects on the *Role Title List* that are perceived to be opposites on some basic characteristics. These too will serve as prompts for further questioning. Each identified object prompt on the *Role Title List* is then numbered and placed in blank spaces at the top of the grid. The *Role Title Contrasts* are then created as a predetermined set of contrasts that the respondent is asked to make after the *Role Title List* has been completed. The interviewer might ask the respondent, for example, to identify ways in which objects 2,3, and 11 are similar and dissimilar. Each particular comparison involves identifying three *Elements* and then asking the respondent to offer ways in which two are alike and two are different. The sets of three are selected in such a way as to imply contrasts but not to supply the ways in which a potential respondent might find similarities or differences between the *Elements*. After processing through the set of *Role Title Contrasts*, the respondent will have

identified the *Constructs* that fill in the sides of the grid. These *Constructs* are the components of or features of the *Elements* that the grid has elicited. In order to facilitate coding of the *Constructs*, coding aids can be added to the grid so that as *Constructs* are identified the interviewer can make a note about some intended aspect of the *Construct* by simply circling a code. These are developed as the key informant interviewing process takes place.

Qualitative coding procedures are then used to code the open ended responses, the *Constructs* generated by the RGT, and the *Elements* that were given as answers to the *Role Title List* prompts. Secondary coding can be used to identify themes which can be used to recognize the constructs. The coding process lends itself very easily to the creation of a taxonomy from which items can be written. The coding of the open ended responses and the *Constructs* form natural rows for the taxonomy while the coding of the *Elements,* the *Role Title List,* and the open ended responses form natural columns for the taxonomy. An application of this technique will be described below to help illustrate how the features of the technique can be operationalized.

An Application

A specific application of the RGT to survey development was completed by The Research Center for Head Start Quality, a federally funded research center charged with examining program level factors that distinguish high quality and low quality Head Start programs. Part of the research process included developing survey instruments designed to assess teacher, parent, and administrator opinions regarding the quality of programs. The RGT was used in order to gain a sense of the definition of quality in Head Start programs according to the voice of Head Start staff and parents. Qualitative interviews were conducted with administrators, teachers, parents, and Head Start Regional Office staff. Both open ended questions and a repertory grid structured interview technique were employed. A total of 189 responses from 26 respondents were coded.

Ninety-four separate codes were established and grouped into the five domains or themes. Anecdotal evidence recorded by the interviewers showed that in virtually every interview, the RGT elicited new information beyond the simpler answers given to the open-ended questions. Respondents repeatedly stated that the RGT stimulated their thinking about the topics of concern. In several cases interviews were conducted with individuals having over 20 years of experience in early childhood education. The open ended portion of the interview lasted an hour or more and yet the RGT still elicited new information and perceptions beyond what the open ended portion had uncovered.

All of these results led to the creation of survey instruments designed to measure quality program practices by asking Head Start personnel in different roles to report their own experience of policy and program management within the program environment. Three instrument versions were created: Administrator, Teacher, and Policy Council Parent. These instruments were then pilot tested through distribution to research colleagues as well as potential respondents within partner Head Start programs. Items in the current versions focus on communication, support, policy setting, implementation strategies, and program climate issues, all from the perspective of the various positions. It is hoped that as these instruments are refined, program level data can be gathered that create a picture of the climate created by the management style of the administrative team in the particular program under study. These variables can then be related to classroom quality and child outcome measures. Results of the survey development process are briefly offered to further illustrate the application of the RGT.

Participants in this study were comprised of 26 individuals, each representing a different facet of early childhood education. The different perspectives represented in this study include: Parent (n=6), Teacher (n=9), Administrator (n=9), and Regional Program Specialist (n=2).

Among the participants 12 were affiliated with Head Start programs, 12 were affiliated with non-Head Start programs, and 2 were regional program specialists, all located in Metro Atlanta or surrounding counties. There were 14 African American and 12 Caucasian participants interviewed, with experience in early childhood education ranging from 3 to 27 years (m=15.84 years). Of those 26 interviewed, 23 were female and 3 were male.

The researchers identified and contacted four local Head Start programs and four local Non-Head Start Early Childhood Development Centers and asked for volunteers from parents, teachers, and administrators. In addition, the researchers asked for volunteers from the Regional Office of the Head Start Bureau. An interview was conducted with each participant and anonymity was maintained by identifying each participant's data with a 2-digit code. Each participant was interviewed separately on site at the child development facility with which he/she was affiliated. During the interview process, participants were asked to respond to demographic questions, an open ended interview, and a repertory grid, to be described below. The demographic questions included current position and years of experience in the area of early childhood education. During the open ended interview, the participant was asked to describe the factors needed in order to have a high quality Head Start program.

The amount of time needed to complete the process for each interviewee ranged from 40 to 120 minutes. This discrepancy in interviewing time seems to relate to the participant's knowledge and experience in early childhood development as well as occasional difficulty with identifying *Constructs* when comparing *Elements*. In one instance, it took 120 minutes to interview a female participant who was an administrator of an Early Childhood Development Center, with 27 years of experience in the field. She spent an hour responding to the open ended interview and an additional hour completing the repertory grid. Despite her extensive knowledge

of the field, the repertory grid triggered additional information not previously thought of during the open ended interview.

Before beginning the interviews a repertory grid outline was constructed. Kelly (1955) defined the repertory grid as a complex sorting task in which elements are judged successively on the basis of a set of bipolar constructs (Liseth, Ford, Adams-Weber, Canas, & Bezdek, 1992). These bipolar constructs represent the ways in which elements are judged to be similar or different from each other. In essence, a repertory grid is a multidimensional overlay of elements onto constructs. Each grid was designed with a column for each element (12) and a row for each construct pair (6). Questions for the elements were created by the research group. The researchers decided on the following 12 questions based on the idea that consistency in the type of question given and answer needed made it easier for the participant to remain focused. Each question was framed to generate aspects of early childhood education that either enhance or hinder high program quality based on the participant's frame of reference or experience. In order to compare across *Elements* at a later time it was necessary that all answers be consistent. The *Element* generated then gave the individual a point on which to focus and attribute a characterization or objective complement, known as the construct. Appendix A contains the grid described below. This methodology gave participants the opportunity to describe quality in their own words for the following 12 prompts:

Can you think of an example of a:

1) High Quality Program?
2) Low Quality Program?
3) High Quality Administrator?
4) Low Quality Administrator?
5) High Quality Teacher?
6) Low Quality Teacher?
7) Policy that enhances quality?

8) Policy that hinders quality?
9) Teacher Activity that enhances quality?
10) Teacher Activity that hinders quality?
11) Program Climate that enhances quality?
12) Program Climate that hinders quality?

Role Title Contrasts were created by asking the following question for 12 different triad combinations (ie., *Elements* 3, 4, 11): Consider 3,4 and 11. How are two the same and how are two different? The list of six triad combinations was constructed by the researchers and held constant for all participants.

The bipolar constructs were then individually rated for one final question. At this step, the constructs were no longer regarded as bipolar. The question was "How important are these attributes to a high quality program?". A seven point likert-type scale was set up for this question and the respondent was asked to rate each of the 12 constructs selecting a 1 for not important and a 7 for very important.

The information from the open ended interviews, the constructs identified from the repertory grids, the references to parent, teacher, and/or administrator, the importance rating resulting from the quality question, and any additional comments generated from the repertory grid were compiled. As a result, the following themes were identified as important to consider when measuring quality in a Head Start program: Teacher/Staffing Issues, Program Administrative Environment, Classroom Environment, Curriculum Issues, and Parent Involvement Issues. Four constructs were identified as occurring with each area each theme: Communication, Support, Policy, and Information Resources. The Taxonomy from which items were created followed from these constructs and themes. Figure 2 illustrates the taxonomy.

The RGT was extremely successful in eliciting and compiling the qualitative information necessary to develop the full range of items that would meet the objectives of the study.

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Figure 1.

The RGT Survey Development Model.

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1. Define the Objectives of the Survey
2. Identify Key Informants
3. Develop Open Ended Interview Questions
4. Develop the Modified Repertory Grid, identifying the following components:
    a. Role Title List
    b. Role Title Dichotomies
    c. Role Title Contrasts
    d. Coding Aids
5. Qualitative Coding
    a. Coding the Open Ended responses
    b. Coding the Elements generated by the RGT
    c. Secondary Coding, Identification of Themes
6. Identifying the Key Constructs from the Themes
7. Developing a Taxonomy based on the Constructs
8. Writing Items Based on the Taxonomy
9. Pilot Study
10. Revise the Instrument

Figure 2.

The Taxonomy for Item Construction.

Construct	Teacher/Staff Issues	Administrative Environment	Classroom Environment	Curriculum	Parent Involvement
Communication					
Support					
Policies					
Information Resources					

Appendix A

ID_____
Date_____
Position_____
_____
_____
Ed. Level_____
Yrs. Exp._____

	1	2	3	4	5	6	7 ---------->					
	Not Important						Very Important					
	How important are these attributes to a high quality program:											
1 - High Quality Program								P	P	P	P	P	P
2 - Low Quality Program								A	A	A	A	A	A
3 - High Quality Administrator								T	T	T	T	T	T
4 - Low Quality Administrator													
5 - High Quality Teacher								1	3	5	1	5	7
6 - Low Quality Teacher								2	4	6	7	9	11
7 - Policy that enhances quality								3	11	9	8	10	12
8 - Policy that hinders quality													
9 - Teacher Activity that enhances quality													
10 - Teacher Activity that hinders quality								P	P	P	P	P	P
11 - Program Climate that enhances quality								A	A	A	A	A	A
12 - Program Climate that hinders quality								T	T	T	T	T	T
	How important are these attributes to a high quality program:												
	Not Important						Very Important						
	1	2	3	4	5	6	7 ---------->						

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